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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/988,439

11/20/2001

Akitoshi Kikuchi

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10/06/2004

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EXAMINER

MCCLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,439

Applicant(s)

KIKUCHI, AKITOSHI

Examiner

Renata McCloud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 57-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 57-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/26/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 57, 59-61, 63, and 64 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation “acceleration/deceleration” is indefinite. It is unclear if it means “acceleration or deceleration” or “acceleration and deceleration”.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 57-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson as applied to claim 1, 17, 30, 31, 45, and 46, and further in view of Huang (US 6,388,415).

Claims 57 and 61: Thompson teaches an apparatus and method comprising synchronous signal generating means (Fig. 1:10) generating a synchronous signal (Col. 4:13-19) having a period corresponding to N times of one line of an image (Col. 1:25-32, 5: 16-23; see Claim 5); line trigger producing means (Fig. 1:20) producing N line triggers in synchronous with generation of the synchronous signal (Col. 4:13-24); a motor controller (Fig. 1: 14) controlling a stepping motor (Fig. 3:38); and a CPU (Fig. 1:12) controlling the motor controller (Fig. 1:14) in synchronous with the generation of the synchronous signal (Col. 2: 63-3:5), wherein the motor controller effects motor control until at least a next synchronous signal is reached on the basis of the line triggers (3:25-42) the motor controller includes first memory means (Fig. 1: 20) holding the timer data advancing a phase of the motor (Col. 3:16-19) and second memory means (Fig. 1:28) for holding the number of steps of the timer data (Col. 3:25-34), the stepping motor is controlled on the basis of the timer data and the number of steps (Col. 3:25-34, 4:20-25).

Thompson does not teach the motor controller is synchronized with the line triggers produced by the producing means and controls acceleration and deceleration of the stepping motor by switching acceleration and deceleration tables comprised of the timer data and the number of steps. Huang teaches the motor controller is synchronized with the line triggers produced by the producing means (Col. 4: 5-6) and controls acceleration and deceleration of the stepping motor (Col. 4: 61-62) by switching acceleration and deceleration tables (Fig. 10 show switching of acceleration and deceleration) comprised of the timer data and the number of steps (Col. 7:66-8:24).

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to modify the apparatus taught by Thompson to include tables as taught by Huang. The advantage of this would be the ability to change acceleration and deceleration period without influencing constant speed control.

Claims 58 and 62: Thompson and Huang teach the limitations of claims 57 and 61. Referring to claim 58, Huang teaches the motor control unit includes means for holding PWM output data having a predetermined number of bits (Col. 6: 30-41) for determining an exciting current for the stepping motor (Col. 7:44-55), and means for outputting the PWM data stored in the PWM output data storing means (Col. 17: 46-50, signal is output through port) synchronous with the stepping motor (Fig. 3.3b), wherein the motor is controlled by setting the number of bits of the PWM data outputted from the PWM output means (Fig. 3.3b).

Claims 59 and 63: Thompson and Huang teach the limitations of claims 57 and 61. Referring to claim 59, Huang teaches the motor control unit (Fig. 13: 136) includes step-up or step-down number storing means (Fig. 1: 138) for holding a step-number or a step-down number of the acceleration or deceleration table (Col. 5: Table 1), and step-up or step-down of the acceleration or deceleration table is effected on the basis of the step number or the step-down number held by a step-up or step-down number storing means (Fig. 10).

Claims 60 and 64: Thompson and Huang teach the limitations of claims 59 and 63. Referring to claim 60, Huang teaches a motor control unit (Fig. 13: 136) includes

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step-up or step-down number storing means (Fig. 1: 138) for holding a step-number or a step-down number of the acceleration or deceleration table (Col. 5: Table 1), and step-up or step-down of the acceleration or deceleration table is effected on the basis of the step number or the step-down number held by a step-up or step-down number storing means (Fig. 10).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
Examiner
Art Unit 2837



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